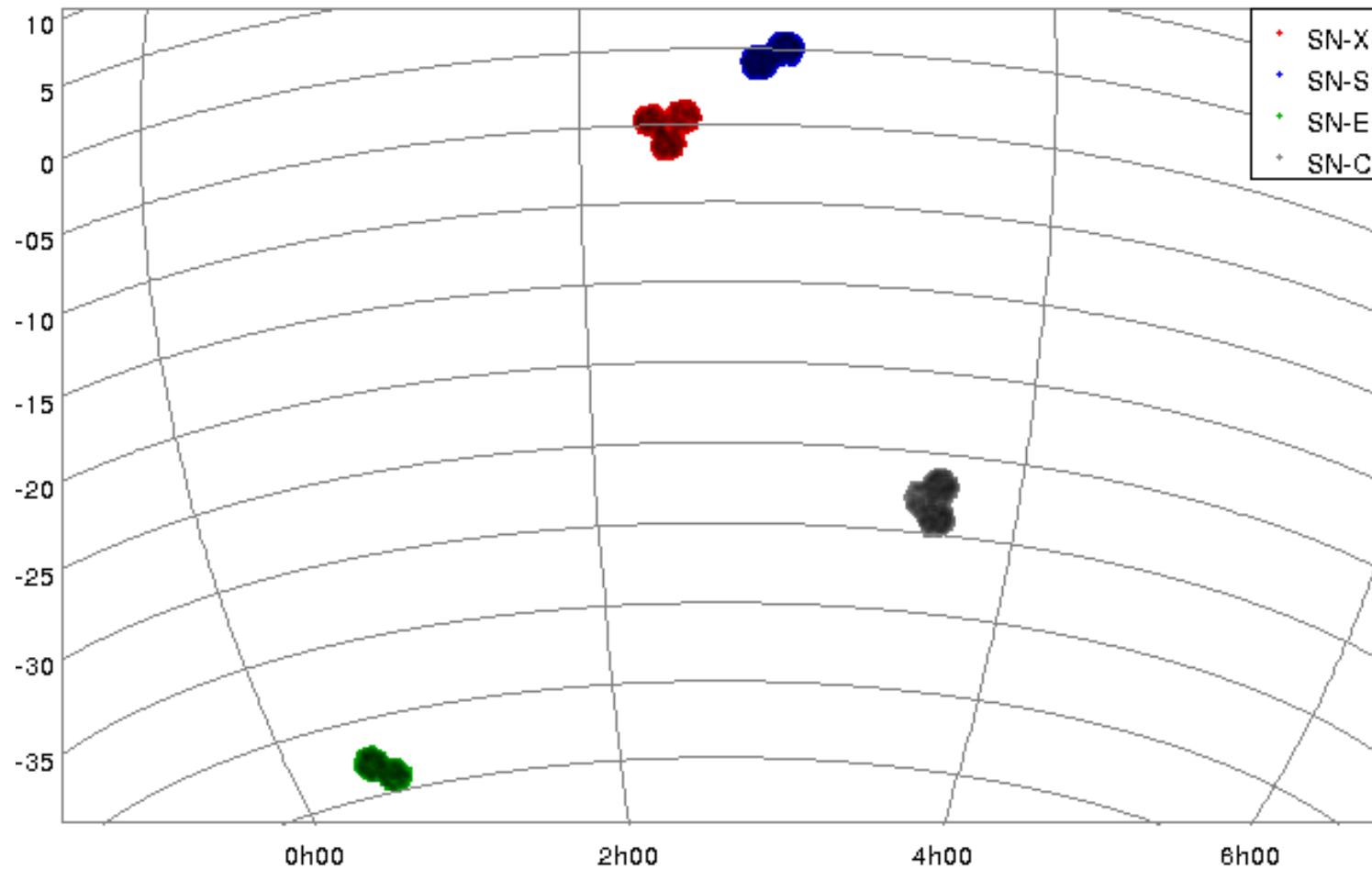




F-Stars in the DES SN Fields for OzDES Calibrations

DARK ENERGY
SURVEY





DARK ENERGY
SURVEY

Status: Note from William (2014-08-20)

The status is that Douglas and a summer student calibrated u-band exposures taken early in SVA1 such that we can do color selection for both WDs and Fstars that make use of u-band in all 10 SN fields (previously, we used SDSS selection in just the S and C fields). I've analyzed these calibrated stars and can send out target lists in short order. I'm doing a few checks to make sure I get transformation equations between DES and SDSS correct and will check against previously identified WDs and Fstars.

Once these checks are done, I'd like to request 15 Fstar candidates and 5 WD candidates fibers per field. Within one or two runs, we should have spectroscopically confirmed candidates. My understanding is that something like 5 Fstar flux calibrators and perhaps a couple DA WDs per field will be the eventual steady state. On first look, I can provide this number of candidates in each field with g-magnitude brighter than about 17.5 such that reasonable S/N should be obtained.

I'll need input whether we'll use SVA1 or Y1A1 astrometry. If it's the latter, then I'll have to re-find the candidates in Y1A1. The downside is Y1A1 is just now appearing and the actual Y1A1 coadds may appear too late for the first OzDES run. I'd vote for SVA1 coadds to provide the ra and dec since they have been stable and have measured uncertainties less than what I've seen for the AAT requirements.



F-Star Selection by (SDSS) Colors

(Yanny et al. 2009)

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SURVEY

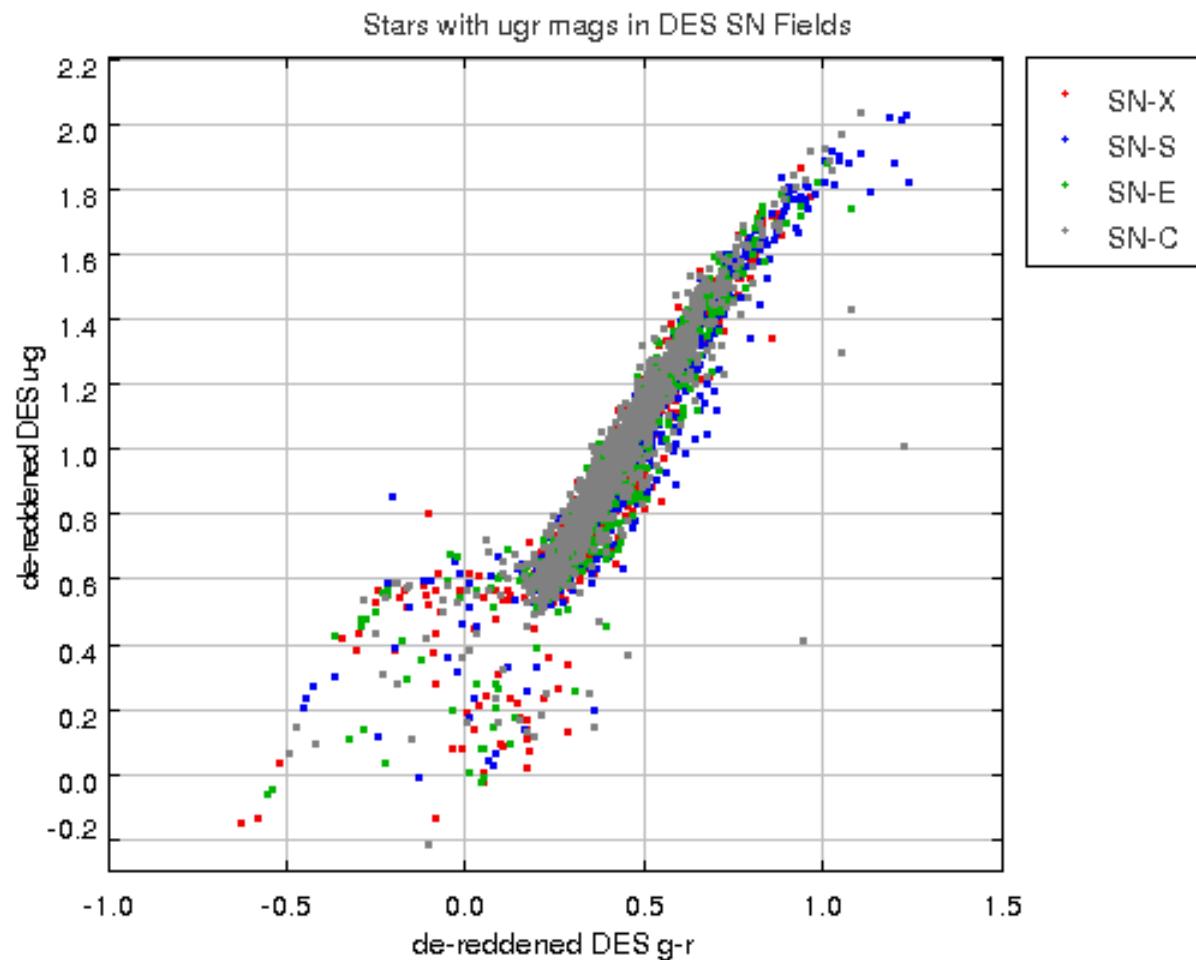
- $-0.7 < 0.91(u-g) + 0.415(g-r) - 1.28 < -0.25$
- $0.4 < u-g < 1.4$
- $0.2 < g-r < 0.7$
- $g < 20.3$

(Thanks to Chris Blake for pointing out these selection criteria to us!)



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Stars with Calibrated DES ugr mags in the DES SN Fields

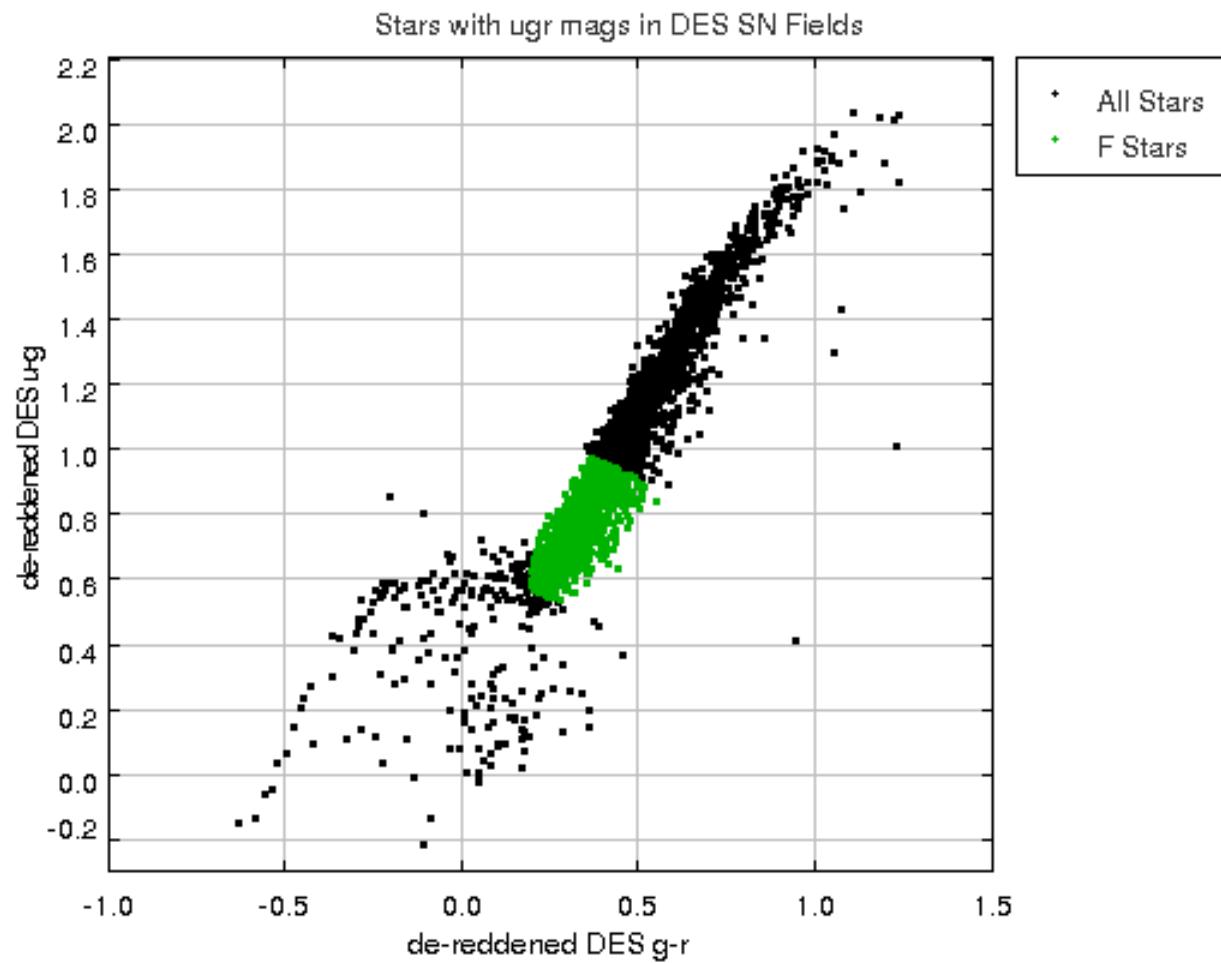


(Thanks to Todd Tomashek with helping with the DES u-band data, and thanks to Sam Wyatt of APSU for calibrating these!)



Stars Meeting the F Star Selection Criteria in the DES SN Fields

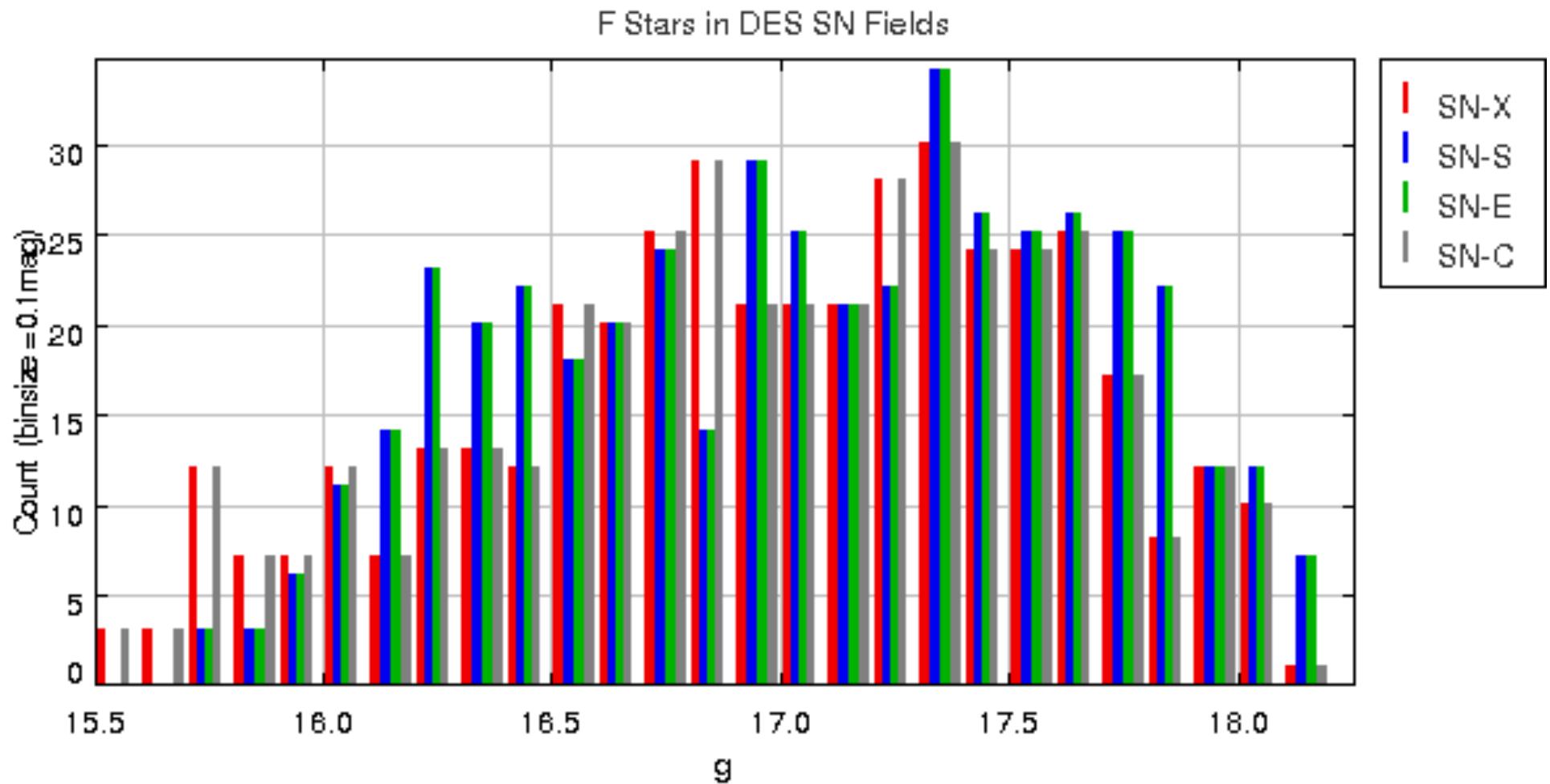
DARK ENERGY
SURVEY





Stars Meeting the F Star Selection Criteria in the DES SN Fields

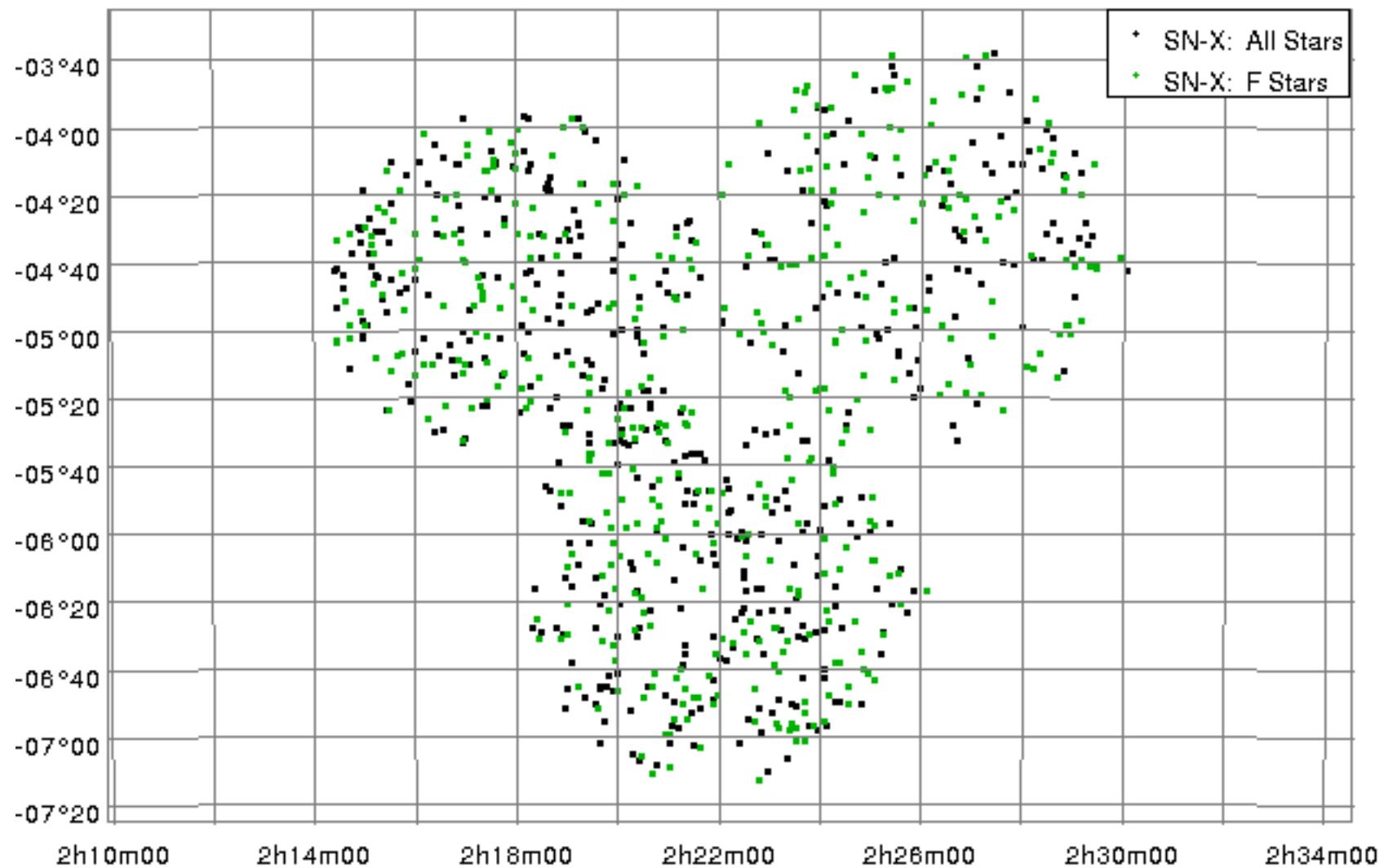
DARK ENERGY
SURVEY





DES SN-X Field

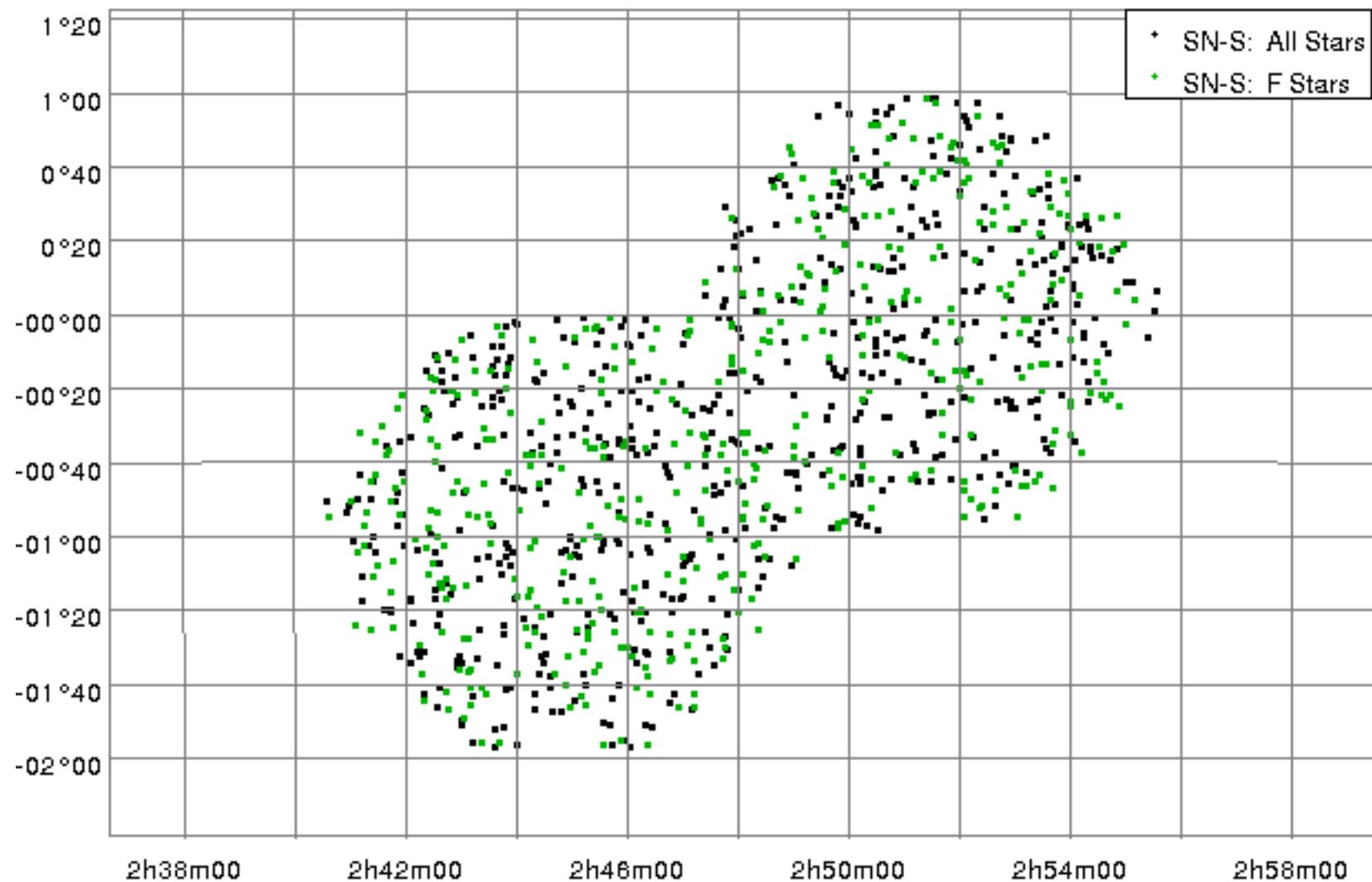
DARK ENERGY
SURVEY





DARK ENERGY
SURVEY

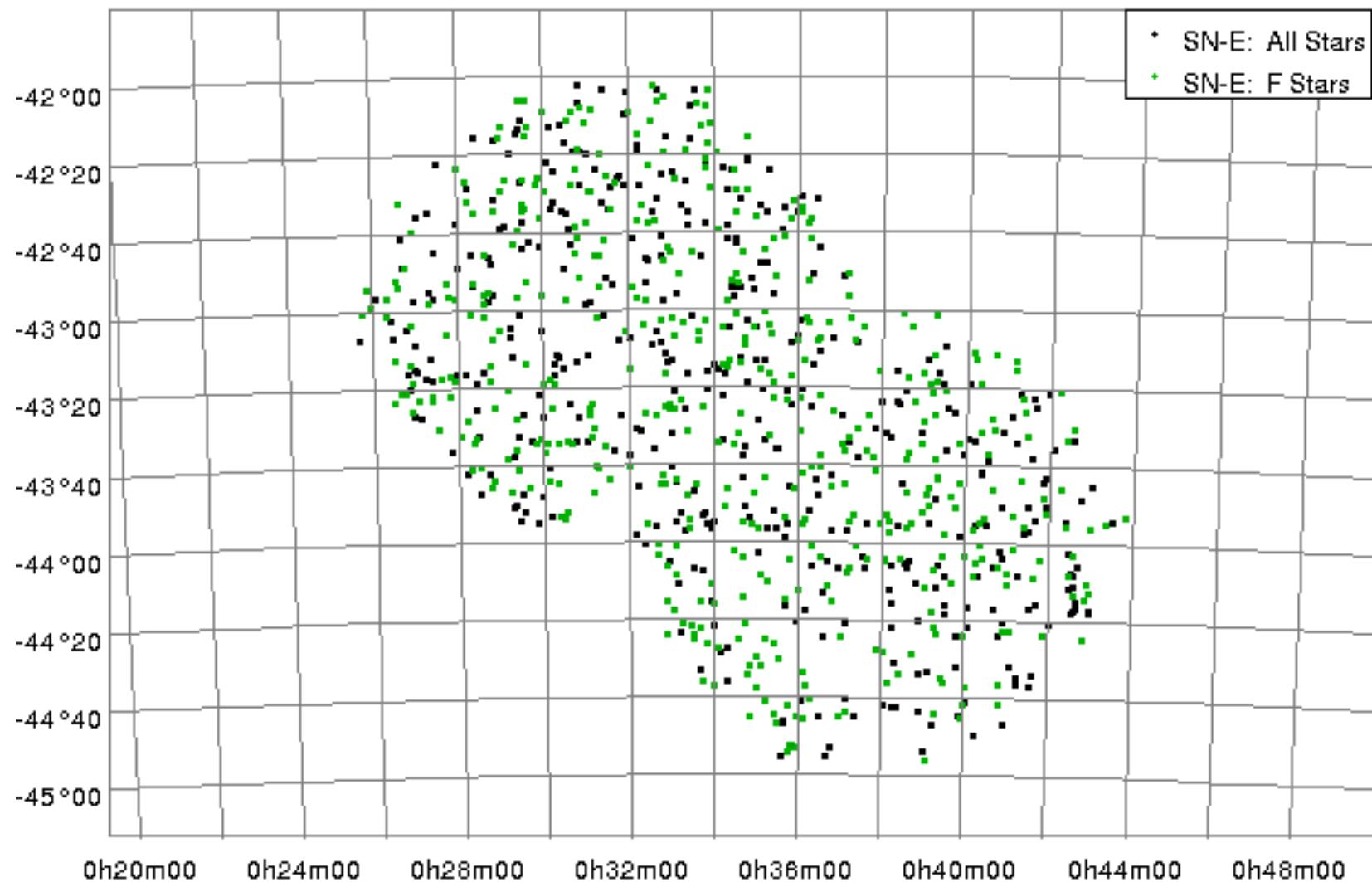
DES SN-S Field





DES SN-E Field

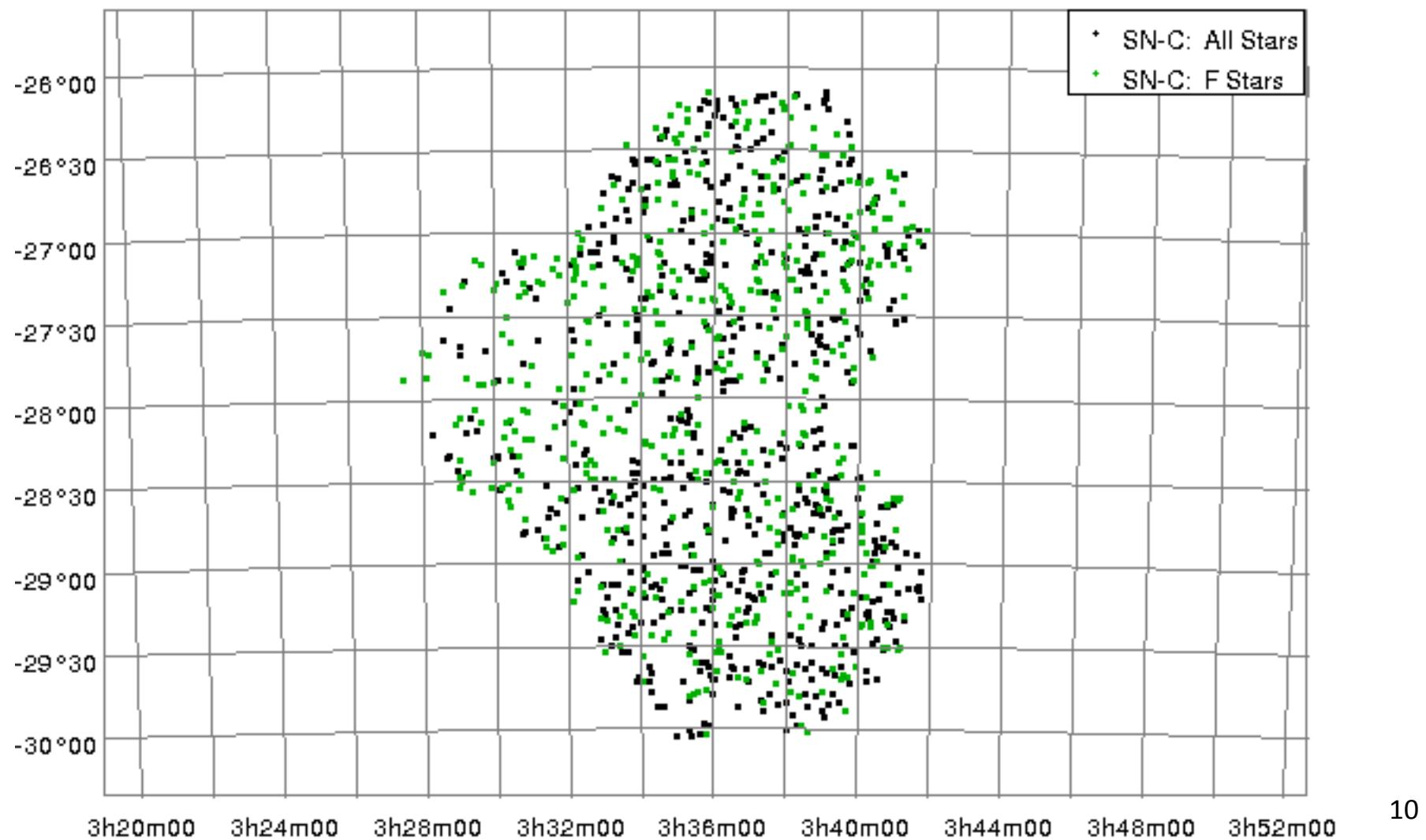
DARK ENERGY
SURVEY





DES SN-C Field

DARK ENERGY
SURVEY





DARK ENERGY
SURVEY

Caveats

- In the previous plots, the SDSS-based Yanny et al. (2009) F-star selection criteria were applied “as is”, without any transformation from the SDSS to DES photometric system.
- Currently, the SDSS->DES u-band transformation is uncertain, especially redward of $u-g \approx 1$.



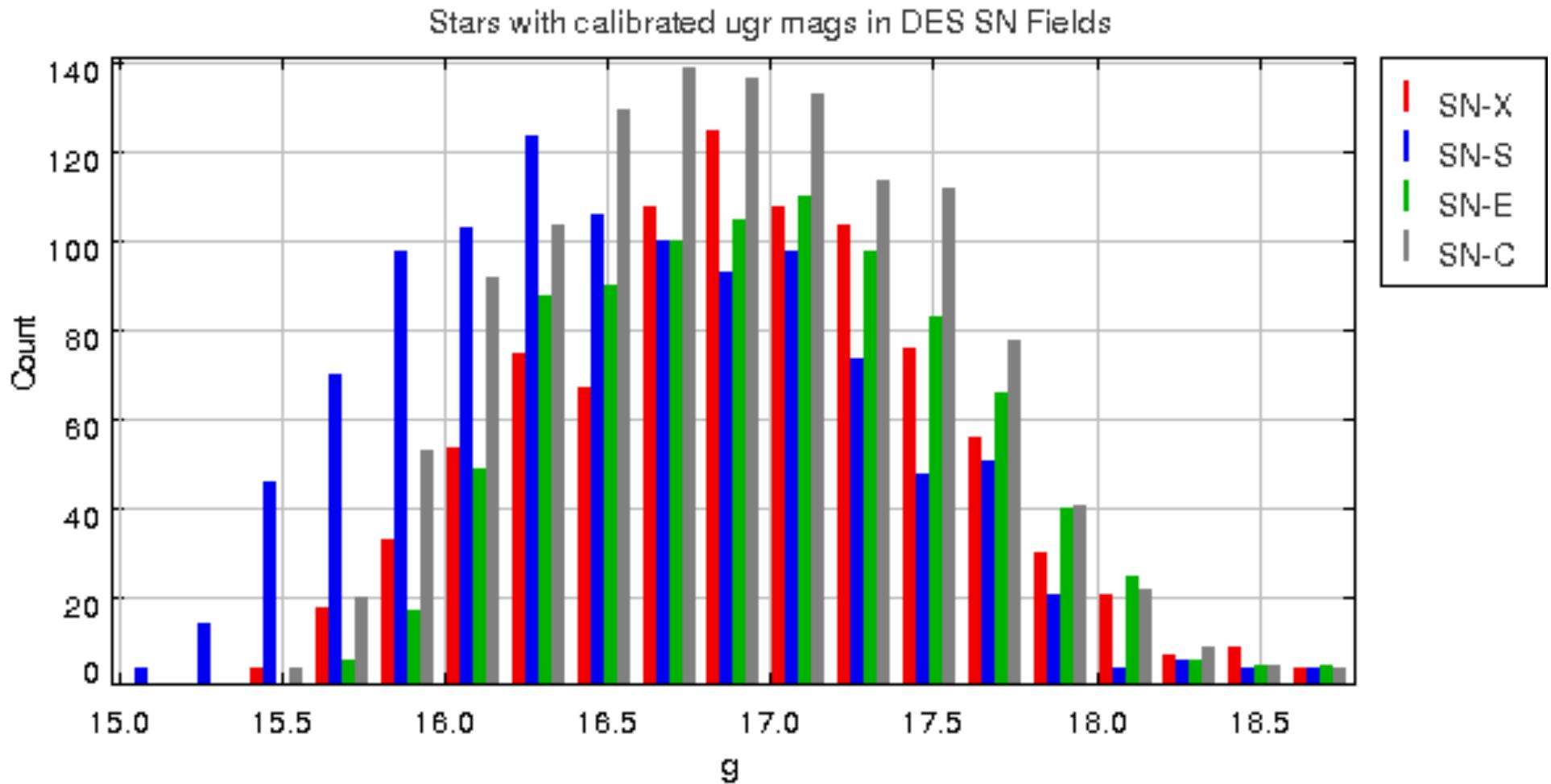
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SURVEY

Extra Slides



DARK ENERGY
SURVEY

Stars with Calibrated DES ugr mags in the DES SN Fields





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SURVEY

Stars with Calibrated DES ugr mags in the DES SN Fields

Stars with ugr mags in DES SN Fields

